



NeoResins

Product Data Sheet : Crosslinker CX-100

Crosslinker CX-100 is a 100% active, polyfunctional aziridine liquid crosslinker. Addition of 1-3% to water based acrylic emulsions or urethane dispersions produces a marked improvement in water, chemical, abrasion and humidity resistance and enhances adhesion to specific substrates. Crosslinker CX-100 is room temperature reactive and therefore can be used under air and forced drying conditions.

Typical properties

Type	polyfunctional aziridine crosslinker
Appearance	clear yellowish liquid
Total solids (w/w %)	> 99
Viscosity Brookfield (25°C)	200 mPa.s
pH (25°C)	10.5
Density (20°C)	1.08 kg/l
Stability (20°C)	6 months
Water tolerance (%)	> 100
Solubility	complete in acetone, xylene, isopropanol n-butyl acetate, carbitol, butyl carbitol

Recommendations for end-use

- In water based parquet lacquers to improve water, alcohol, detergent, chemical and abrasion resistance
- In water based industrial wood-, plastic- and metal coatings to increase water, alcohol and block resistance
- In vinyl coatings to reduce plasticizer migration and improve stain resistance
- In water based concrete sealers to improve abrasion resistance
- Generally, to improve adhesion of water based systems to non-polar substrates
- In solvent based polymers to increase resistance properties
- In water based printing inks to improve water and detergent resistance

Formulating guidelines

- Crosslinker CX-100 is a tri-functional material that crosslinks polymers with reactive carboxyl functionality (equivalent weight is approx. 166)
- For many applications 0.6 equivalents of CX-100 per carboxyl equivalent are sufficient to achieve optimum improvement in film properties
However some systems may require the full stoichiometric equivalent of crosslinker
- Typical addition levels of CX-100 necessary to fully crosslink acrylic emulsions and urethane dispersions are 2% and 3% respectively (calculated on wet products)
- Crosslinker CX-100 should be added to lacquers, paints or inks prior to use and due to its excellent water miscibility it can be stirred in by hand.
The best method of addition is by using a 1:1 premix of CX-100 and water.

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- In water borne formulations, CX-100 will slowly hydrolyse and blends should therefore be used within 3-5 days after preparation. The hydrolysed products have no adverse effects on the emulsions nor on the dried films, and additional crosslinker may be added to restore reactivity
- Solvent based systems modified by the addition of CX-100 must be used within 5 days because they tend to thicken and may gel within 2 weeks

Safety and Toxicity

- All relevant data have been brought up to date in the Material Safety Data Sheet for Crosslinker CX-100 (date 02/2000 or later).
- **Crosslinker CX-100 is intended to be used in industrial applications only.** Industrial users such as formulators, professionals and trained applicators can safely use the product as long as the proper safety equipment is employed and all product is used according to directions.
- Crosslinker CX-100 is a hazardous product that requires an Xn (Harmful) label and Risk and Safety phrases as indicated in the Material Safety Data Sheet.
- According to EEC directive 88/379/EEC and subsequent amendments, wet lacquers, inks and paints containing CX-100 need to be considered hazardous at concentrations of >1% CX-100, with the appropriate R-phrases, this in spite of the fact that mixtures of emulsions with the recommended amount of CX-100 as well as their dried films were found to be Ames-negative.
- Crosslinker CX-100 is not approved by any food law administration for use in coatings or inks for indirect food contact.
- Test results relevant for the use of CX-100 in inks or lacquers on food packaging material are available upon request.
- Levels of free PI in Crosslinker CX-100 will be lower than 50 ppm.

Handling

Care must be taken to avoid any contact with the skin and eyes.

When used in spray applications, particular care must be taken to avoid oral and/or nasal ingestion by wearing a suitable respirator. When handling CX-100 it is desirable to prevent inhalation of vapours by proper ventilation or respirator use.

See our Material Safety Data Sheet for specific information.

Storage

Store in a cool, dry, dark place. If stored under conditions of excessive heat for extended periods the material may discolour, deteriorate and gel.

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